APPARATUS, METHOD, AND SYSTEM FOR A LASER-ASSISTED FIELD EMISSION MICROWAVE SIGNAL GENERATOR

ABSTRACT OF THE DISCLOSURE

[0055] A source electrode is biased to lower the potential barrier of surface electrons. A laser radiates the source electrode, producing a tunneling electron current. The tunneling electron current oscillates in response to frequency of the laser. The impedance match circuit couples the current from a high-impedance source electrode of a laser-assisted field emission to a lower-impedance connector, creating a high-frequency microwave signal source. Two or more lasers may be photomixed to further tune the frequency of the microwave signal.

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